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When the PCAOB Talks, Who Listens? Evidence from Stakeholder Reaction to GAAP-Deficient PCAOB Inspection Reports of Small Auditors

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SUMMARY: Section 104 of the Sarbanes-Oxley Act (SOX) created the Public Company Accounting Oversight Board (PCAOB). The PCAOB conducts inspections of registered public accounting firms that provide audits for publicly traded companies. The results of the inspection process are summarized in publicly available reports at the PCAOB website. Using these reports, we categorize the inspection reports into three levels of increasing severity: clean, GAAS-deficient, and GAAP-deficient. We examine the potential use of GAAP-deficient PCAOB inspection reports as perceived audit quality signals for the clients of GAAP-deficient auditors that are inspected on a triennial basis by the PCAOB. Our investigation is predicated on the notion that audit quality is generally not directly observable. Thus, the clients of these auditors may seek to signal their desire for audit quality by dismissing their GAAP-deficient auditors. Our results suggest that the clients of GAAP-deficient, triennially inspected auditors are more likely to dismiss these auditors in favor of triennially inspected auditors that are not GAAP-deficient. In addition, we find that greater agency conflicts, the presence of an independent and expert audit committee, and outside blockholdings magnify this effect. Interestingly, we find no evidence that the clients use GAAP-deficient reports to procure a subsequent-year audit fee discount or more favorable going-concern auditor reporting treatment. Our evidence indicates that PCAOB inspection reports created heterogeneity in auditor brand name among a group of non-Big N/non-national auditors that did not previously exist and are universally treated by prior research as "other auditors."

Keywords: audit quality signals; PCAOB inspection process.

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INTRODUCTION

In response to major accounting and auditing scandals such as WorldCom, Enron, and Global Crossing, the U.S. Congress enacted the Sarbanes-Oxley Act of 2002 (SOX, U.S. House of Representatives 2002). One of the more prominent aspects of SOX was the creation of the Public Company Accounting Oversight Board (PCAOB). The PCAOB is a private regulatory agency, independent of the accounting industry. It was designed to oversee the auditors of public companies, to protect the interests of investors, and further the public interest in the preparation of informative, fair, and independent audit reports (PCAOB 2005). Congress bestowed upon the PCAOB the ability to inspect the work of all accounting firms that audit publicly traded companies. The results of the inspections are summarized in publicly available reports on the PCAOB website.

Inspections are conducted annually for Big 4 and national auditors with greater than 100 publicly held registrants (annually inspected auditors).[1] The inspection process is conducted every three years for auditors with fewer than 100 publicly held clients (triennially inspected auditors). The corresponding inspection reports detail a firm's number of publicly held clients and any inspection process findings. We classify inspection reports into three categories according to severity. In a clean report, the PCAOB finds no audit deficiencies. In a GAAS-deficient report, the PCAOB notes that the financial statements audited by the auditor are free of material error, but that the audit process did not fully follow GAAS-recommended audit procedures. In a GAAP-deficient report, the PCAOB states that the auditor "failed to identify a material departure from GAAP" or that the audited company "restated certain of its financial statements to make changes relating to" matters/audit deficiencies uncovered by the PCAOB inspection (PCAOB 2005).

The variation, objectivity, and accessibility of the PCAOB inspection reports suggest the potential for stakeholder reaction to these reports via the auditor choice decision—especially for those employing GAAP-deficient, triennially inspected auditors.[2] Since auditing helps to ensure that financial statements are free of material misstatements and conform to GAAP, prior research posits that external auditor-provided audit quality can reduce information asymmetries and the costs associated with agency conflicts (Jensen and Meckling 1976). However, since audit quality is generally not directly observable, the market must use publicly available proxies for it (Barton 2005; DeFond 1992). As such, we examine the potential use of PCAOB inspection reports of triennially inspected auditors as audit quality signals.

Whether PCAOB inspections improve actual audit quality and whether PCAOB inspections provide information and/or signal value about inherently unobservable audit quality, are two separate questions. More specifically, several papers examine the association between outcome-based measures of audit quality and PCAOB inspection reports (DeFond and Lennox 2011; Gunny and Zhang 2012; Gramling et al. 2011; Carcello et al. 2010) and the nature of the relation is not fully understood in terms of the severity of the report. In contrast, the current study examines the PCAOB in the context of whether GAAP-deficient PCAOB inspection

[1] The Big 4 firms are Deloitte & Touche, Ernst & Young, KPMG, and PricewaterhouseCoopers. The national firms are BDO Seidman, Crowe Chizek, Grant Thornton, and McGladrey LLP.

[2] There is very little variation in the severity of the reports for annually inspected auditors. For example, through 2010, no annually inspected auditor received a clean PCAOB inspection report, and every Big 4 auditor received a GAAP-deficient report. This is not to say that the inspection reports have an equivalent impact on the perception of audit quality in the presence of large auditor size differences. Prior research has consistently noted that marketplace participants perceive Big 4 auditors as providing higher audit quality, even though actual audit quality is inherently unobservable. Thus, the dominant effect of the two countervailing signals (Big 4 auditor brand name and GAAP-deficient PCAOB inspection reports) is that the Big 4 still retain a higher perceived level of audit quality.

reports of triennially inspected auditors are enough of a deleterious audit-quality signal to prompt dismissals of these auditors. Our study then identifies the successor triennially inspected auditor and uses the three-tiered categorization scheme to denote an increase in auditor quality. Specifically, we create a dichotomous dismissal-based dependent variable coded "1" in cases where the dismissal results in a higher-quality triennially inspected successor auditor, and "0" otherwise.

Our auditor dismissal analysis is predicated upon the potential use of the PCAOB inspection reports as a publicly available signal of audit quality. In particular, if the inspection reports are not used as publicly available signals of audit quality, we should be unable to document an association between inspection report severity and variables found in prior research to be related to auditor switching/audit quality. Accordingly, our analysis includes agency-based variables of inside ownership, leverage, proceeds from securities placements, and firm size (Blouin et al. 2007; Barton 2005; DeFond 1992). This is because in high agency-cost settings, clients may demand higher audit quality to signal more credible financial reports to stakeholders and to reduce the costs associated with agency conflicts (Hope et al. 2011).

Our analysis also incorporates governance variables of audit committee composition and the outside blockholdings (Barton 2005; Abbott and Parker 2000). In particular, reputation and litigation concerns may compel independent and expert audit committees to demand greater perceived audit quality (Abbott and Parker 2000). Similarly, outside blockholders depend on the quality of financial statements to facilitate their monitoring and may also demand greater perceived audit quality (Barton 2005; Abbott and Parker 2000). Finally, we also control for auditor-specific variables related to auditor switching such as opinion shopping and fee shopping (Ettredge et al. 2007; Ghosh and Lustgarten 2006). We predict that firms with high agency costs, independent and expert audit committees, and large blockholdings are more likely to dismiss their triennially inspected, GAAP-deficient auditors and hire a successor that is non-GAAP-deficient in an effort to signal higher audit quality.

We find that GAAP-deficient, triennially inspected auditors are more likely to be dismissed by their clients and are overwhelmingly replaced by a triennially inspected successor that has not received a GAAP-deficient inspection report. We also document that the dismissal rate for the clean PCAOB inspection report sample is 17.9 percent, while the dismissal rate for the GAAP-deficient sample is a significantly higher 44.3 percent. We also find that greater agency conflicts, the presence of an independent and expert audit committee, and blockholdings magnify the likelihood of dismissing a GAAP-deficient, triennially inspected auditor in favor of a triennially inspected auditor that is not GAAP-deficient. Interestingly, we find that opinion shopping or fee shopping does not differentially impact the likelihood of dismissing a GAAP-deficient, triennially inspected auditor in favor of a triennially inspected auditor that is not GAAP-deficient.

Our test setting is unique because it is purely voluntary. The auditor dismissal decision as well as audit committee formation and composition (for the overwhelming majority of our sample firms) is not mandated or forced. Similar to Kohlbeck et al. (2008), Blouin et al. (2007), and Barton (2005) who study client-firm reaction to the Arthur Andersen scandal, a GAAP-deficient PCAOB inspection report represents an exogenous, unanticipated reduction in the audit quality signal surrounding the incumbent auditor. However, unlike these papers, the setting we are testing is *voluntary* auditor dismissals. Client firms could still opt to retain their triennially inspected auditors after the issuance of GAAP-deficient PCAOB inspection reports.

We believe our focus on the signaling content of the PCAOB report among triennially inspected auditors enriches our test setting in several important ways. First, clients of triennially inspected auditors are likely to have a much more elastic response to a reduction in the audit quality signal indicated by a PCAOB inspection report than the clients of Big 4 and national firms (Ghosh

and Lustgarten 2006). Clients of triennially inspected auditors are smaller, which reduces auditor-switching costs and increases the elasticity of demand for audit quality signals.[3] Second, clients of triennially inspected auditors have more flexibility with respect to audit committee formation and composition.[4] Third, our sample is comprised almost entirely of dismissals/appointments/retentions of triennially inspected auditors, which helps to isolate the effects of the PCAOB inspection report because auditor choice is unlikely to be influenced by auditor brand name. Fourth, a triennially inspected auditor report will remain in the public domain for three years. The longer lag between inspections allows clients to amortize potential switching costs over a longer period, thus, providing additional incentive to dismiss a GAAP-deficient, triennially inspected auditor.

Our paper contributes to the literature in several ways. First, we provide initial empirical evidence that Securities and Exchange Commission (SEC) registrants found GAAP-deficient PCAOB inspection reports to be a useful signal of audit quality for triennially inspected auditors. Our evidence indicates that PCAOB inspection reports created heterogeneity in auditor brand name that did not previously exist. This finding contrasts with prior research, which has treated all triennially inspected auditors as one homogenous group known as "other." Second, our paper is the first to empirically link audit committee characteristics to PCAOB inspection report severity and auditor choice. We believe this is an increasingly relevant finding as audit committees have been granted much greater auditor dismissal and hiring authority due to SOX. Finally, our paper is also the first to link the use of PCAOB inspection reports to an agency-based demand for audit quality signals.

Our paper also provides timely evidence pertaining to recent regulatory developments concerning the PCAOB and SEC. First, our failure to document significant stakeholder reaction to GAAS-deficient inspection reports *vis-à-vis* clean inspection reports suggests that auditors may have been successful in downplaying the importance of these deficiencies (PCAOB 2011a). Second, within our audit committee effectiveness composite variable, we find that audit committee expertise is the largest, most statistically significant coefficient estimate in terms of the decision to dismiss a GAAP-deficient, triennially inspected auditor. This finding indicates that expertise is critical in terms of interpreting the contents of inspection reports. Third, we note that clients did not appear to use the GAAP-deficient inspection reports to obtain more favorable going-concern auditor reporting treatment or audit fee discounts. The PCAOB and the inspection process have recently seen increased political scrutiny (PCAOB 2011b, 2011c) and our findings illuminate the potential benefits of the inspection process for triennially inspected auditors. Fourth, our evidence indicates that the PCAOB inspection reports may be interpreted as audit quality signals—an issue with increasing relevance as the PCAOB has recently expanded its inspection process to include the auditors of broker-dealers (PCAOB 2011d) and considered expanding to China-based registrants (PCAOB 2011a).

The remainder of our paper is organized as follows. The second section reviews prior research and discusses our hypotheses. The third section describes our research design. The fourth section presents sample selection, results, and sensitivity analyses. The fifth section summarizes the study's results.

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[3] In contrast, the auditor dismissal decision is much less elastic for clients of annually inspected auditors, and report severity varies little among these auditors. For example, all of the annually inspected auditors received a deficient report throughout our sample period. However, we believe that their perceived audit quality is still high due to auditor brand name of large auditors.

[4] Virtually all of the clients of annually inspected auditors are on the three major exchanges. Thus, audit committee formation and composition of these clients are generally not voluntary, but rather mandatory, decisions.

PRIOR RESEARCH AND HYPOTHESES DEVELOPMENT

The PCAOB Inspection Report Process

In 2002, a major regulatory shift occurred in the accounting industry. Self-monitoring, under the AICPA, was largely replaced by external monitoring, under the PCAOB, representing an end to more than 50 years of self-regulation in the U.S. auditing industry. Section 101 of SOX established the PCAOB. The PCAOB has four core program areas: registration, inspections, standard setting, and enforcement. The PCAOB devotes most of its resources to inspections, and the inspection team is the single-largest group of employees at the agency. Section 104 of SOX requires the PCAOB to conduct an inspection of each registered public accounting firm that participates in the preparation of financial statements for publicly traded companies. By law, the PCAOB annually inspects registered public accounting firms that issue audit reports for more than 100 public companies, and it triennially inspects those that issue audit reports for 100 or fewer public companies.

PCAOB inspections involve (1) evaluating the quality of the audit work performed on a specific audit engagement, and (2) reviewing the auditor's quality control system. Engagement reviews include examining portions of selected audit engagements performed in the prior year. The inspection team does not review every engagement; instead, inspectors adopt a risk-based approach and select engagements and aspects of that engagement for inspection on the basis of an internally developed risk model. If the inspection team identifies deficiencies, it alerts the auditor to the deficiencies during the inspection. During the inspection process, the PCAOB does not directly communicate inspection findings to the auditors' portfolio of clients or stakeholders (i.e., blockholders, audit committees). Any deficiencies that exceed a significance threshold are summarized in a public portion of a publicly available PCAOB report (although the client identity is kept confidential). Defects related to the review of the auditor's quality control system are discussed in the nonpublic portion of this report and remain nonpublic unless the auditor fails to address them to the board's satisfaction within 12 months.

Several current studies examine the impact of the PCAOB inspection process. Gramling et al. (2011) investigate whether PCAOB inspections results are associated with a change in audit-firm behavior. They find that triennially inspected audit firms receiving a GAAS- or GAAP-deficient PCAOB inspection report are more likely to issue a going-concern opinion for financially distressed clients after the issuance of the report than before. Gunny and Zhang (2012) examine whether PCAOB inspection results can distinguish audit quality and find GAAP-deficient PCAOB reports are associated with lower audit quality in the form of restatement frequency and abnormal accruals. Moreover, Gunny and Zhang (2012) document significant variation in the severity of the PCAOB inspection reports, particularly among triennially inspected auditors. Like Gunny and Zhang (2012), we find limited variation in the severity of the PCAOB inspection report for the Big 4 and national auditors (i.e., no annually inspected auditor receives a clean report, and all Big 4 auditors receive a GAAP-deficient report).

A few papers examine the PCAOB inspection report as a signal of audit quality (Lennox and Pittman 2010; Offermanns and Peek 2012). Lennox and Pittman (2010) examine auditors' market share changes after the issuance of deficient PCAOB inspection reports. The results of their auditor-level regression suggest that market share changes are insensitive to deficient PCAOB inspection reports and indicate that the inspection reports may have been "uninformative." Lennox and Pittman (2010, 96) point out that their auditor-level methodology leads to a "parsimonious specification" but that "client characteristics do not

come into play."[5] In contrast, Offerman and Peek (2012) examine the market response to PCAOB inspection reports and find an economically significant response.

We focus exclusively on the clients of triennially inspected auditors. Overall, we believe that our focus on these clients creates a more powerful setting to test stakeholder reaction to GAAP-deficient inspection reports since potential switching costs are lower due to (1) smaller client size, (2) three-year duration of the inspection report that allows clients to amortize the switching costs over a longer time period, and (3) more competitive, atomistic auditor market in the smaller auditor market (Ghosh and Lustgarten 2006).

Hypothesis Development

A priori, we build our hypotheses around the potential use of the most severe type of PCAOB inspection report as an audit quality signal. We do so in order to strengthen the power of our initial tests of the signaling potential of the PCAOB inspection reports for triennially inspected auditors. We also perform similar tests for the clients of GAAS-deficient, triennially inspected auditors as discussed in the "Results for the GAAS-Deficient Sample" section. We fashion our tests in this manner because GAAS-deficient inspection reports may be just as deleterious an audit quality signal as GAAP-deficient reports.[6] Even though Gunny and Zhang (2012) find evidence that GAAP deficiencies are associated with abnormal accruals (an outcome-based measure of actual audit quality), extant research is only beginning to fully understand the nature of what the PCAOB inspection reports reveal. As such, there is not enough empirical support to definitively state on an *a priori* basis that a GAAP-deficient report is *perceived* to be more severe than a GAAS-deficient report. For example, the results of Lennox and Pittman (2010) suggest that GAAS deficiencies do not matter from a perceived audit quality perspective, whereas the results of Gramling et al. (2011) suggest otherwise.

As our initial benchmark test, we posit that there are several reasons why stakeholders could view a GAAP-deficient PCAOB inspection report as a publicly available signal of audit quality and react accordingly. First, experienced and independent personnel conduct PCAOB inspections.[7] Second, a GAAP-deficient PCAOB inspection report indicates that the auditor has failed to prevent or detect a material GAAP misstatement by the client firm, which comports with the notion of audit quality as defined by DeAngelo (1981). Third, consistent with the signaling literature, a signal's informativeness is likely to be a function of its variation. Close to 12 percent of initial PCAOB inspection reports of triennially inspected auditors were GAAP-deficient. Fourth, PCAOB inspection reports are easily accessible at the PCAOB website (Roybark 2006; Farrell and Shadab 2005; Carlino 2005; Victor and Levitin 2004; Spillane 2004; Aguilar and Rankin 2004). Finally, since the PCAOB's inspection scope is broad due to unprecedented powers of enforcement and access to confidential documents and clients, the inspection report contains specifics about the particular audit deficiencies. These factors suggest the potential for stakeholder reaction in the form of the dismissal of a triennially inspected auditor that has received a GAAP-deficient inspection report. This leads to our first hypothesis (stated in alternative form):

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[5] Our results and methodology are distinct from Lennox and Pittman (2010). First, our evidence suggests that a GAAP-deficient inspection report is more likely to trigger an auditor dismissal relative to a GAAS-deficient or clean report. Second, Lennox and Pittman (2010) leave open the empirical question of whether clients of triennially examined auditors react differentially to GAAP-deficient PCAOB inspection reports contingent upon firm-specific characteristics such as agency costs, audit committee composition, and outside blockholdings. Third, in cases when the auditor is dismissed, we identify successor auditors to determine whether, and when, perceived audit quality has increased.

[6] We thank an anonymous reviewer for bringing these issues to our attention.

[7] On average, large-firm inspection teams had 23 years of experience, while the remaining inspection teams averaged more than 14 years of experience (PCAOB 2005).

H1: There is a positive relation between the receipt of a GAAP-deficient PCAOB inspection report and the likelihood of dismissing a triennially inspected auditor in favor of a non-GAAP-deficient auditor.

Our second hypothesis builds from agency cost theory. Jensen and Meckling (1976) describe how agency costs occur as a result of the separation of ownership (by the investors) and control (by management) of the firm. When management offers a portion of the firm to investors, agency costs arise as a result of moral hazard (Watts and Zimmerman 1983; Jensen and Meckling 1976). Managers, in turn, can mitigate these costs by voluntarily hiring independent auditors for monitoring, thus, increasing the observability of their actions (Jensen and Meckling 1976). DeFond (1992) notes that, within the agency relationship, two aspects create the agency problem: (1) the divergence in preferences between management and shareholders and (2) the imperfect observability of managerial actions. Increases in either one or both aspects dictate a greater degree of perceived agency conflict by market participants who, in turn, impose greater agency costs on these firms. This creates the agency-based demand for audit quality and audit quality signals (DeFond 1992; Watts and Zimmerman 1983).

In high agency-cost settings, auditees may demand higher perceived audit quality to signal more credible financial reports to stakeholders (Hope et al. 2011).[8] We hypothesize that, as registrants become aware of their auditor's PCAOB inspection status, firms with greater agency conflicts (i.e., low managerial ownership, high leverage, and size) are more likely to dismiss an auditor that received a deficient inspection report. This leads to our second hypothesis (stated in alternative form):

H2: Greater agency conflict values magnify the positive relation between the receipt of a GAAP-deficient PCAOB inspection report and the likelihood of dismissing a triennially inspected auditor in favor of a non-GAAP-deficient, triennially inspected auditor.

Our third hypothesis concerns the audit committee, a key stakeholder in the auditor switch decision. Abbott and Parker (2000) posit that reputation and litigation concerns compel independent audit committees to demand greater perceived audit quality in the form of auditor choice, lower nonaudit service purchases, or both (Abbott and Parker 2000; Abbott et al. 2003). However, a necessary complement to independence is the need to understand the audit quality concept, creating a need for audit committee financial expertise (Abbott et al. 2004). In 2002, SOX mandated independence and financial expertise requirements for audit committees of firms whose securities trade on one of the three major exchanges. Thus, virtually all audit committees during our sample period should be in compliance with SOX and have independent, expert audit committees. However, our sample is composed of the clients of triennially inspected auditors and these companies overwhelmingly trade on the Pink Sheets or the Over the Counter Bulletin Board (OTCBB)—neither of which have SOX-related audit committee regulations. These clients are exempt from the SOX-related audit committee requirements but can voluntary choose to comply. The potential variation in audit committee composition with respect to audit committee independence and expertise leads to our third hypothesis (stated in alternative form):

H3: Independent and expert audit committees magnify the positive relation between the receipt of a GAAP-deficient PCAOB inspection report and the likelihood of dismissing a triennially inspected auditor in favor of a non-GAAP-deficient, triennially inspected auditor.

[8] These audit quality signals may or may not be surrogates of actual audit quality on a client-by-client basis.

Our fourth hypothesis concerns blockholders. Bushee and Noe (2000) note that outside blockholders depend on the quality of audited financials to facilitate their monitoring. Accordingly, outside blockholders may play a role in the auditor switch decision by demanding greater perceived audit quality. Prior literature suggests that illiquidity encourages blockholders to be more active monitors because they cannot easily exit their position (Maug 1998). Clients of triennially inspected auditors overwhelmingly trade on the low volume Pink Sheets or OTCBB exchanges, which likely decreases the liquidity of an outside blockholder's ownership stake. As such, we expect the level of outside block ownership to magnify the likelihood of dismissing a GAAP-deficient auditor. This leads to our fourth hypothesis (stated in alternative form):

H4: Outside blockholdings magnify the positive relation between the receipt of a GAAP-deficient PCAOB inspection report and the likelihood of dismissing a triennially inspected auditor in favor of a non-GAAP-deficient, triennially inspected auditor.

Our fifth hypothesis also builds from agency cost theory. Specifically, information asymmetry creates another type of agency cost in the form of adverse selection costs when firms issue securities (Titman and Trueman 1986; Watts and Zimmerman 1983; Jensen and Meckling 1976). This also provides an incentive to registrants to increase perceived audit quality and reduce the degree of market discounting (Titman and Trueman 1986; Watts and Zimmerman 1983; Jensen and Meckling 1976). This leads to our final hypothesis (stated in alternative form):

H5: Securities issuances magnify the positive relation between the receipt of a GAAP-deficient PCAOB inspection report and the likelihood of dismissing a triennially inspected auditor in favor of a non-GAAP-deficient, triennially inspected auditor.

RESEARCH DESIGN

Regression Model and Variable Definitions

Consistent with prior research (Barton 2005; Carcello and Neal 2003), we use a logistic regression framework to address our research questions. Our model is given below:

$$\begin{aligned} DISMISS = {} & \beta_0 + \beta_1 DEFRPT + \beta_2 INOWN + \beta_3 DEFRPT{*}INOWN + \beta_4 LEVERAGE \\ & + \beta_5 DEFRPT{*}LEVERAGE + \beta_6 SIZE + \beta_7 DEFRPT{*}SIZE + \beta_8 ACE \\ & + \beta_9 DEFRPT{*}ACE + \beta_{10} BLOCK + \beta_{11} DEFRPT{*}BLOCK + \beta_{12} FINANCE \\ & + \beta_{13} DEFRPT{*}FINANCE + \beta_{14} GOINGCON + \beta_{15} DEFRPT{*}GOINGCON \\ & + \beta_{16} FEECUT + \beta_{17} DEFRPT{*}FEECUT + \beta_{18} FEWCLIENT \\ & + \beta_{19} DEFRPT{*}FEWCLIENT + \beta_{20} RESTATE + \beta_{21} DEFRPT{*}RESTATE + \varepsilon \end{aligned} \tag{1}$$

where:

DISMISS = indicator variable coded "1" for companies that dismissed their triennially inspected incumbent auditor and hired a non-GAAP-deficient, triennially inspected successor within one year after the PCAOB inspection report was publicly disclosed, and "0" otherwise;

DEFRPT = indicator variable coded "1" for companies whose auditors received a GAAP-deficient PCAOB inspection report upon the public dissemination of the inspection report on the PCAOB website and "0" for companies whose auditors received a clean PCAOB inspection report;

INOWN = cumulative percentage of voting stock shares held by managers and directors (from proxy statements);

LEVERAGE = ratio of long-term debt to total assets (from 10-KSB, 10-K, or Compustat);
SIZE = natural log of total assets in millions (from 10-KSB, 10-K, or Compustat);
ACE = audit committee effectiveness variable coded "1" for an audit committee composed entirely of outside directors and having at least one financial expert as designated by SOX, and "0" otherwise (from proxy statements);
BLOCK = cumulative ownership percentage of voting stock shares held by blockholders that are unaffiliated with management and hold at least 5 percent of the outstanding common shares (from proxy statements);
FINANCE = total cash received from equity or debt issuances for the two years after receipt of the PCAOB inspection report, scaled by total assets. Both years in the measurement period must be full calendar years and measurement of this variable commences during the first full calendar year after the receipt of the PCAOB inspection report (from 10-KSB, 10-K, or Compustat);
GOINGCON = indicator variable coded "1" in instances where firm has received a going-concern audit report modification, and "0" otherwise (from 10-KSB, 10-K, or Compustat);
FEECUT = indicator variable coded "1" for client firm receiving a fee reduction in the year following their auditor receiving an unfavorable PCAOB inspection report , and "0" otherwise (from proxy statement);
FEWCLIENT = indicator variable coded "1" in instances where incumbent auditor audits fewer than five publicly held companies, and "0" otherwise (from PCAOB inspection report); and
RESTATE = indicator variable coded "1" in instances where firm has experienced at least one restatement of annual financial statements in the two-year period prior to the inspection report date, and "0" otherwise (from 10-KSB, 10-K or 8-K).

The model above is designed to test the main effect of a GAAP-deficient PCAOB inspection report on the likelihood of auditor dismissal relative to a clean PCAOB inspection report. Our interactive terms are designed to test the incremental impact of specific stakeholders and agency conflict on the likelihood of dismissing a triennially inspected auditor, conditional upon the receipt of a GAAP-deficient PCAOB inspection report. We include *GOINGCON*, *FEECUT*, and *FEWCLIENT* as both stand-alone control variables and as interacted with our *DEFRPT* variable.

Dependent Variable Definition

Our dependent variable, *DISMISS*, is an indicator variable coded "1" for companies that dismissed their triennially inspected incumbent auditor in favor of a non-GAAP-deficient auditor within one year after the PCAOB inspection report was publicly disclosed, and "0" otherwise. If a client retains its incumbent auditor, the *DISMISS* variable is coded as a "0." If a client dismisses its incumbent auditor and hires a GAAP-deficient, triennially inspected successor, this observation is also coded as a "0." When calculating the *DISMISS* variable we ensure the PCAOB inspection report is publicly available before the client makes the decision to retain or dismiss the incumbent auditor.[9] Appendix A provides examples of clients that decide to dismiss their GAAP-deficient auditor once the PCAOB inspection report becomes publicly available. Consistent with Hilary and Lennox (2005), we exclude all auditor

[9] In less than 5 percent of our observations, the PCAOB report date was within 60 days of the audit report date of the client of the triennially inspected auditor. Additional analysis suggests our results are robust to excluding these observations (see the "Sensitivity Analysis" section for more details).

resignations as these are dismissals that are not auditee initiated.[10] Information concerning this variable is obtained via inspection of forms 8-K or 10-KSB via the SEC's EDGAR website.[11] In terms of identification of successor auditors, we note that "lateral" switches between GAAP-deficient auditors (i.e., switches from one GAAP-deficient auditor to another) are rare, with only one such switch.[12] In addition, if an auditor switch was undertaken, switches to either a Big 4 or national auditor were rare, regardless of the sample. For example, only eight of the 177 switches from a GAAP-deficient auditor resulted in a Big 4 or national firm successor auditor and only six of the 92 switches from a clean, triennially inspected auditor resulted in a Big 4 or national firm successor auditor.[13]

Deficient Report Variable Definition

Our report variable, *DEFRPT*, is coded "1" for companies whose triennially inspected auditors received a GAAP-deficient PCAOB inspection report and "0" for companies whose triennially inspected auditor received a clean inspection report. We measure this variable at the time the PCAOB inspection report is publicly available on the PCAOB website.

Test Variables

H2 relates to agency costs and the demand for audit quality. Our agency-based variables are derived from the two conditions giving rise to agency conflict: (1) a divergence of interests between management and shareholders and (2) unobservability of the agent's action. Consistent with DeFond (1992), we use inside ownership and leverage to proxy for the first condition and client-firm size to proxy for the second. Higher levels of insider ownership (*INOWN*) align the interests of managers and owners (Copley and Douthett 2002; DeFond 1992; Jensen and Meckling 1976) and, thus, lower agency conflicts. This, in turn, reduces the need for perceived audit quality, so we expect that higher (lower) levels of inside ownership reduces (magnifies) the likelihood of dismissing a GAAP-deficient, triennially inspected auditor. Consistent with prior research (DeFond 1992), we expect higher leverage (*LEVERAGE*) to increase potential agency conflicts and thus magnify the likelihood of dismissing a GAAP-deficient, triennially inspected auditor. As firm size grows, the unobservability of management's actions is amplified, increasing the need for a firm to signal higher audit quality. Consistent with prior research (DeFond 1992), we expect *SIZE* to

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[10] Unless disclosed as an auditor resignation, we assume an auditor change was client initiated. Auditor realignments that are auditor initiated (i.e., resignation from a particular client, resignation from the PCAOB and declining to audit publicly held clients, an auditor that is merged with another audit firm) are deleted from our sample. Our statistical inferences are robust to including resignations in our sample.

[11] There are several instances of noncompliance with 8-K disclosures due to the nature of the clients. In particular, many client firms encapsulate their proxy information and 8-K information in their annual 10-KSB form. Furthermore, many client firms have fewer than 500 shareholders and are not required to file such statements with the SEC and can disclose them in their annual 10-KSB.

[12] Similarly, for the GAAS-deficient sample, "lateral" switches after dismissal were very rare, with less than two switches between auditors with GAAS-deficient inspection reports and only one switch from a GAAS-deficient auditor to a GAAP-deficient auditor.

[13] The mean value of our *DISMISS* variable for the GAAP-deficient sample is 0.443 or 168 auditor switches that resulted in a higher-quality, non-GAAP-deficient triennially inspected auditor. The 177 total switches pertains to the 168 switches resulting in a higher-quality (either GAAS-deficient or clean) triennially inspected auditor, 8 switches to a Big4/national auditor and one lateral switch between GAAP-deficient auditors. For the clean sample, the mean value of our *DISMISS* variable is 0.179 or 84 dismissals whereby the incumbent auditor was a clean, triennially inspected auditor and the successor auditor was either clean or GAAS-deficient. The 92 total dismissals pertain to the aforementioned 84 dismissals and 6 dismissals that involved a switch from a clean, triennially inspected auditor to a Big4/national auditor and 2 auditor dismissals that involved a switch from a clean, triennially inspected auditor to a GAAP-deficient auditor.

intensify the likelihood of dismissing a GAAP-deficient, triennially inspected auditor. All financial statement information is collected via Compustat, if available, or the firm's form 10-KSB.

H3 and H4 relate to audit committees' and blockholders' ability to demand an increase in the audit quality signal—whether perceived or actual. Abbott et al. (2007, 2004, 2003) find that effective audit committees have the independence and expertise necessary to voice their concerns over actual and perceived audit quality and influence outcomes to impact it. We define our audit committee effectiveness variable (*ACE*) consistent with this line of research and SOX. Information concerning this variable is collected from the firm's proxy statement or 10-KSB. We expect effective audit committees will intensify the likelihood of dismissing a GAAP-deficient, triennially inspected auditor. We define *BLOCK* as the cumulative percentage of outstanding stock held by an unaffiliated institution, and information on this variable is collected from the firm's proxy statement. We expect *BLOCK* to intensify the likelihood of dismissing a GAAP-deficient, triennially inspected auditor.

H5 relates to the issuance of securities. We measure securities activities (*FINANCE*) as the amount of proceeds raised from debt and equity issuances, scaled by total assets. As security issuances may be sporadic and large in volume, we measure security issuances over two years, if possible. We take the average of the total proceeds scaled by total assets for the two separate years. In addition, the measurement period for this variable commences during the first full calendar year succeeding the PCAOB inspection report. This is because clients use the most recently filed audited financial statements to raise funds, so proceeds raised in the current period are based on financial statements associated with the prior period's auditor. If a firm decides to issue securities, it is motivated, from this point forward, to increase perceived audit quality.[14] We expect that greater securities issuance will magnify the likelihood of dismissing a GAAP-deficient, triennially inspected auditor.

Control Variables

In addition to our test variables, we control for other factors that prior research has found to impact the auditor retention/dismissal decision. First, prior research has shown that "opinion shopping" may be a reason to switch auditors (Ettredge et al. 2007), therefore we include *GOINGCON*. Firms receiving a going-concern modification may switch auditors to obtain a more favorable audit report during the next reporting period. We expect a positive relation between this variable and the likelihood of dismissing auditors but do not provide an expectation on its influence of dismissing a GAAP-deficient, triennially inspected auditor. We also control for "fee shopping" by including *FEECUT*. Prior research has found firms often use auditor switching as a means of procuring a reduction in their audit fees (Ghosh and Lustgarten 2006). We include *FEECUT* as a main and interactive variable to determine whether retaining an incumbent auditor is negatively associated with the decision to dismiss (i.e., main effect) or if dismissing a deficient auditor can be used as a "reason" to "mask" the client's attempt to lower audit fees (i.e., interactive effect).

Third, we control for the size of the auditor (*FEWCLIENT*). The PCAOB inspectors adopt a risk-based approach and select engagements and aspects of that engagement for inspection based on an internally developed risk model. The number of engagements selected for inspection usually increases with the size of the auditor, and any deficiencies related to engagement reviews are

[14] To illustrate, if a client's auditor receives a GAAP-deficient PCAOB inspection report on April 6, 2006, then the client cannot change perceived audit quality when raising funds during calendar year 2006. This is because the 2005 financial statements (issued in 2006) remain the last full set of audited financial statements for the entire calendar year 2006. However, if the client anticipates raising funds in 2007, then the perceived quality of the auditor associated with the 2006 financial statements (most likely issued in early calendar year 2007) will matter.

disclosed in the PCAOB inspection report but the client identity is confidential. However, if the auditor receives a deficient PCAOB report and if the auditor only has a few public clients, the identity of the client may be more apparent. We expect that our *FEWCLIENT* variable will intensify the likelihood of dismissing a GAAP-deficient, triennially inspected auditor. Last, we include *RESTATE* to ensure our dismissal results are not driven by the presence of earnings restatements instead of GAAP-deficient PCAOB inspection reports (Farber 2005; Wilson 2008).

SAMPLE SELECTION AND RESULTS

Sample Selection and Descriptive Statistics

We obtain all inspection reports from the PCAOB website from January 21, 2005 to December 31, 2007. From each report, we capture the following data: auditor name, dates when the field work was conducted, date the inspection report was publicly disclosed on the PCAOB website, number of publicly traded clients, whether there was an audit deficiency, and whether one of the audit deficiencies related to a failure to detect a departure from GAAP that could, if material, result in a restatement of the financial statements. A total of 521 triennially inspected nonforeign accounting firm PCAOB inspection reports were filed from January 21, 2005 to December 31, 2007, of which 256 (49.1 percent) were clean, and 61 (11.7 percent) were GAAP-deficient.

Of the 61 auditors that received a GAAP-deficient report, we remove four GAAP-deficient auditors that had their registration revoked by the PCAOB (Armando Ibarra; Clyde Bailey; Kantor, Geisler & Oppenheimer; Timothy Steers). Of the remaining 57 auditors, we can obtain clients for 54. Constructing auditor-specific client portfolios for the GAAP-deficient sample was time consuming and labor intensive since many of the client firms are too small to be included in the Compustat or Audit Analytics databases. Thus, to construct client portfolios, we utilized the SEC's extended search function. We used the auditor's name as the search term and limited the document search to either form 10-K or form 10-KSB. For each entry that was generated, we then examined the 10-K or 10-KSB to confirm the auditor's employment via the audit report. For each client, we require financial statements, agency proxies, and audit committee variables, and we exclude clients in the financial or utility industries.

Table 1, Panel A reports the 54 GAAP-deficient, triennially inspected auditors included in our sample. The 54 GAAP-deficient auditors report 525 publicly held clients per their PCAOB inspection reports. Nonetheless, there is a significant difference between the self-reported publicly held clients and the number of these clients that filed a 10-K or a 10-KSB with the SEC EDGAR website. Many smaller clients with fewer than 500 shareholders are not required to file annual statements (10-K, 10-KSB, or proxy statements) with the SEC. As a result, we can obtain complete data for only 379 of the 525 potential client firms.

Panel C of Table 1 provides the distribution of the 379 clients of GAAP-deficient auditors by industry as defined in Abbott and Parker (2000). The information and communication industry is the most highly represented industry for both the GAAP-deficient and clean samples. Most industries are well represented, with the exception of construction (SIC codes 15xx–17xx), personal services and healthcare (SIC codes 72xx, 80xx, and 83xx) and other (SIC codes 1xx, 2xx, 7xx, 8xx, and 99xx).

Control Sample

To determine if client firms reacted differently to the type of PCAOB inspection report, we construct a control sample. Our control sample is comprised of clients whose auditors receive a clean PCAOB inspection. These clients have no *a priori* reason to dismiss a triennially inspected auditor receiving a clean PCAOB inspection report as a means of signaling audit quality. In

TABLE 1

Distribution of Observations

Panel A: Distribution of Client Observations by GAAP-Deficient Auditor

GAAP-Deficient Auditor	Clients per Inspection Report	Sample Clients	GAAP-Deficient Auditor	Clients per Inspection Report	Sample Clients
Ahearn, Jasco and Co.	3	1	Jaspers & Hall, PC	28	20
Akin, Doherty, Klein & Feuge	2	2	Johnson, Miller & Co.	3	2
Arshad M. Farooq	1	1	Kahn Boyd Levychin	8	5
Beckstead & Watts	61	37	Kyle Tingle	7	4
Bedinger & Co.	3	2	Larry E Nunn	1	1
Bernstein & Pinchuk	3	2	Lynda Keeton	1	1
Brown Smith Wallace, LLC	4	2	Mahoney Sabol & Co.	3	3
Buckno Lisicky & Co.	1	1	Mayer, Hoffman & McCann	15	12
Carter, Cartier Melby Guarino	1	1	Michael F. Cronin	8	6
Causon & Westhoff	1	1	Miller Ray & Houser	5	3
CF & Co.	5	3	Perrella & Associates	8	4
Chisholm, Bierwolf & Nilson	67	59	Peter Cosmas	2	2
Clancy & Co.	16	12	Pugh & Co. PC	5	4
Cordovano & Honeck	47	36	R.A. Fredericks & Co.	1	1
Davis Kinard & Co.	1	1	Ronald R. Chadwick	4	4
DeCoria, Maichel & Teague	8	6	S.W. Hatfield	18	14
Drakeford & Drakeford	2	2	Seligson & Giannatassio	6	5
Dudley, Hopton-Jones, Sims	1	0	Shelley International CPA	14	11
Durland & Co.	5	4	Sprouse & Anderson	11	7
E. Randall Gruber	9	9	Staples Larkin & Associates	1	0
Earl Cohen	9	5	Steakley, Gilbert & Morgan	1	1
Eisner LLP	57	34	Turner Jones & Co.	2	2
Farber, Hass, Hurley, McEwen	16	12	Turner Stone & Co.	10	8
Francis & Co.	5	3	UHY MannFrankfort	7	6
Freedman & Goldberg	3	1	Weinick, Sanders, Leventhal	7	6
Hall, Kistler & Co. LLP	1	1	Wiener, Goodman & Co.	4	2
IWA Financial Consulting	1	0	Withum, Smith & Brown	12	7
			Totals	525	379

Panel B: Distribution of Client Observations by CLEAN Auditor

CLEAN Auditor	Clients per Inspection Report	Sample Clients	CLEAN Auditor	Clients per Inspection Report	Sample Clients
Altschuler Melvoin & Glasser	23	2	LeMaster & Daniels	4	1
Anton Collins Mitchell	7	1	Levitz Zacks & Ciceric	2	2
Asher & Co.	9	2	LWBJ	1	1
Baker Newman & Noyes	12	2	Lynch & Howard	2	2
Bateman & Co.	5	1	Marc Lumer & Co.	1	1
Battelle & Battelle	4	2	Margolies Fink & Wichrowski	1	1
Beadle McBride Evans Reeves	4	3	Margolin Winer & Evans	3	2
Berkowitz Dick Pollack Brant	1	1	Margolis & Co.	3	3
BKD, LLP	77	9	Mason Russell West	2	2
Bongiovanni & Associates	9	3	Mazars	1	1

(continued on next page)

TABLE 1 (continued)

CLEAN Auditor	Clients per Inspection Report	Sample Clients	CLEAN Auditor	Clients per Inspection Report	Sample Clients
Borland Benefield Crawford	1	1	McLeod & Co.	1	1
BP Audit Group	2	1	Meaden & Moore	10	2
Brady, Martz & Associates	9	1	Miller Wachman	3	3
Braverman Int.	18	3	Moore Stephens	5	5
Briggs, Bunting & Dougherty	50	7	Moore Stephens Frost PLC	6	4
Burton McCumber & Cortez	4	3	Morrison, Brown, Argiz, Farra	5	2
Cacciamatta Accountancy Corp.	6	2	Most & Co.	4	4
Carlin, Charron & Rosen LLP	24	13	Murrell, Hall, McIntosh & Co.	16	9
Carr, Riggs & Ingram LLC	6	2	Nation Smith Hermes Diamond	3	3
Carter & Co.	2	1	Nussbaum Yates & Wolpow	3	2
Carver Moquist & O'Connor	7	6	Odenberg, Ullakko, Muranishi	11	7
Cohen McCurdy	50	34	Olsen Thielen & Co.	2	1
Cole & Reed	3	1	Pannell Kerr Foster PC	1	1
Conner & Associates	16	1	Paritz & Co.	6	3
Cornick Garber & Sandler	2	1	Pender Newkirk & Co.	21	9
Coulter & Justus	5	2	Pisenti & Brinker	1	1
D'Arcangelo & Co.	2	2	PKF Witt Mares	5	4
Divine Scherzer & Brody	1	1	PKF, CPA (California)	9	4
Epstein Weber & Conover	26	20	PKF, CPA (New York)	8	6
Farmer, Fuqua & Huff	11	2	Pohl, McNabola, Berg & Co.	17	10
Ferlita Walsh & Gonzalez PA	4	3	Pustorino, Puglisi & Co.	1	1
Fitts Roberts & Co.	3	2	Raimondo Pettit Group	2	2
Fitzgerald Snyder & Co.	2	2	Ramirez International	1	1
Freed Maxick & Battaglia	12	6	Ramirez International	2	2
Freeman Buczyner & Gero	1	1	Rehmann Accounting LLC	12	4
Gelfond Hochstadt Pangburn	21	16	Reznick Group	50	8
Goff Backa Alfera & Co.	5	5	Richard L. Brown & Co.	3	2
Goldstein Lewin & Co.	5	5	Richey May & Co.	3	3
Goodman & Co.	21	5	Robert N Clemons	4	2
Gordon, Hughes & Banks	16	10	Robnett & Co.	2	1
Greenberg & Co.	3	3	Rodefer Moss & Co.	3	2
Gregory Sharer & Stuart PA	4	1	S.R. Snodgrass	18	7
Grobstein, Horwath & Co.	12	6	Schechter Dokken Kanter Andre	4	3
Gumbiner Savett Inc	4	2	Schneider & Associates	1	1
Haskell & White	19	11	Schneider Downs & Co.	6	3
Hawkins Accounting	4	3	Schoonover Boyer	1	1
Hays & Co.	10	1	Scott McElveen	4	2
Hazlett, Lewis & Bieter	3	1	S.E. Clark & Co.	2	1
Heard McElroy & Vestal	2	2	Smith Carney & Co.	2	2
Henderson Hutcherson McCullo	1	1	Sobel & Co.	3	2
Henjes, Conner & Williams	1	0	Somerset	1	1
Hobe & Lucas	2	1	Spicer Jeffries	3	2
Hogan & Slovacek	1	1	Squar, Milner, Miranda & Willi	21	7
Horowitz & Ullmann	1	1	Stegman & Co.	4	4
Horwath Velez & Co.	1	1	Stowe & Degon	3	2
Jeffrey S. Gilbert	2	2	Sweeney Gates & Co.	3	3
John Kinross-Kennedy	7	4	Swenson Advisors	5	4
Johnson Lambert & Co.	3	1	Tanner LC	19	9

(continued on next page)

TABLE 1 (continued)

CLEAN Auditor	Clients per Inspection Report	Sample Clients	CLEAN Auditor	Clients per Inspection Report	Sample Clients
Joseph Decosimo & Co.	5	1	Tauber & Balser	10	6
Kaufman, Rossin & Co.	3	3	Thomas Leger & Co.	10	3
Kelly & Co.	4	4	Thomas W. Klash	2	2
Kerber Eck & Braeckel	1	1	Thompson Greenspon	1	2
Kiesling Associates	2	2	Tullius Taylor Sartain & Sartain	9	6
King & Co.	1	1	Turner, Stone & Co.	22	9
Kirkland Russ Murphy Tapp	7	5	Walden Certified Public	3	1
L. J. Soldinger	4	1	Wheeler Wasoff	6	3
Lane Gorman Trubitt	7	5	Wipfli LLP	17	2
			Wolinetz, Lafazan & Co.	12	7
			Totals	1,032	470

Panel C: Focus Industry Distribution for Clients of GAAP-Deficient Inspection Report Auditors

Focus Industry	Related Two-Digit SIC Codes	Number of Observations
Construction	15–17	7
Consumer product and food	20–33	46
Energy	10–14, 46, 49	61
Financial services	60–64, 67	37
Information and communication	48, 73, 78, 79, 84	84
Manufacturing	34–39	60
Personal services and healthcare	72, 80, 83	8
Professional, and educational services	75, 76, 82, 87, 89	17
Real estate	65, 70	20
Retail and wholesale	50–59	20
Transportation	40–42, 44, 45, 47	16
All other	1, 2, 7, 8, 99	3
Totals		379

Panel D: Focus Industry Distribution for Clients of Clean Inspection Report Auditors

Focus Industry	Related Two-Digit SIC Codes	Number of Observations
Construction	15–17	14
Consumer product and food	20–33	61
Energy	10–14, 46, 49	95
Financial services	60–64, 67	20
Information and communication	48, 73, 78, 79, 84	110
Manufacturing	34–39	82
Personal services and healthcare	72, 80, 83	14
Professional, and educational services	75, 76, 82, 87, 89	19
Real estate	65, 70	7
Retail and wholesale	50–59	23
Transportation	40–42, 44, 45, 47	15
All other	1, 2,7, 8, 99	10
Totals		470

particular, should this sample exhibit similar dismissal behavior to the GAAP-deficient sample, this could indicate an omitted, correlated variable. For the 256 auditors that received a clean report, we can obtain clients for 135 auditors that are reported in Panel B of Table 1. Several auditors are excluded from our clean sample because they only audit clients that (1) file 11-Ks, 20-Fs, NSAR-Bs, and N-CSRs; (2) are in the financial or utility industries; (3) are not required to file financial statements because they have fewer than 500 shareholders; or (4) do not have the necessary financial statement, agency, or audit committee variables.

The 135 clean auditors audit 1,032 publicly held clients per their PCAOB inspection reports. Similar to the GAAP-deficient sample, there is a significant difference between the self-reported publicly held clients and the number of these clients that filed 10-Ks or 10-KSBs with the SEC EDGAR website. Many smaller clients with less than 500 shareholders are not required to file annual statements (either 10-K, 10-KSB, or proxy statements) with the SEC. As a result, we can obtain complete data for only 470 of the 1,032 potential client firms. Panel D of Table 1 provides a distribution of clients for the clean sample. The industry distribution of the clients of clean, triennially inspected auditors largely mirrors that of the GAAP-deficient sample.

Descriptive Statistics

Table 2 provides definitions of all study variables. Panel A of Table 3 provides descriptive statistics for the 379 clients of GAAP-deficient auditors. Several items are noteworthy. First, the dismissal rate was high with 168 of the 379 sample firms (or 44.3 percent) dismissing auditors within one year of the public disclosure of a GAAP-deficient PCAOB inspection report for their incumbent auditor. Moreover, the 379 sample firms are extremely small, with mean (median) total assets of $10.28 million ($2.25 million). The mean (median) inside ownership was 40.09 percent (36 percent), and less than five percent of clients audited by a GAAP-deficient auditor are traded on any of the three major stock exchanges. As a result, 34 percent of the GAAP-deficient clients had audit committees that met the independence and financial expertise requirements of SOX. Somewhat in contrast to Ghosh and Lustgarten (2006), we find that a small percentage of these 379 clients received a fee reduction in the year after the PCAOB inspection report, with only 10.3 percent of sample firms receiving a fee reduction in the following year. We find that 14.5 percent of our observations were audited by auditors having fewer than five publicly held clients and around five percent had a restatement in the past two years.

Another striking feature of the GAAP-deficient sample, besides firm size, is the financial health of these firms. A majority of these clients, 54.1 percent, received a going-concern modification. Consistent with poor financial health, many of the GAAP-deficient clients needed to raise cash for operations as evidenced by the large *FINANCE* variable measure. Our *FINANCE* variable exhibited a mean (median) value of 0.691 (0.633). In other words, the median GAAP-deficient sample client raised 63 percent of its total assets in subsequent debt or equity issuances. Examining the *LEVERAGE* ratio suggests that the overwhelming majority of securities issuances are in the form of equity issuances. Specifically, our median sample firm had no long-term debt as evidenced by a median *LEVERAGE* value of 0.000. These results are consistent with an increase in the number of loss firms that are publicly held.

Panel B of Table 3 provides descriptive statistics for the 470 clients of clean auditors. In general, the descriptive statistics are very similar for the GAAP-deficient and clean samples. The 470 clean sample clients are also extremely small, with mean (median) total assets of $12.6 million ($3.8 million). The mean (median) inside ownership was 39.0 percent (37.0 percent), and 34.3 percent of our sample firms had audit committees that met the independence and financial expertise requirements of SOX. The rate at which client firms received a going-concern audit opinion was high, at 45.9 percent. As a means of comparing the two samples, we performed univariate tests for

TABLE 2

Variable Definitions

Variable Name	Description
DISMISS	Indicator variable coded "1" for companies that dismissed their triennially inspected incumbent auditor and hired a non-GAAP-deficient triennially inspected successor within one year after the PCAOB inspection report was publicly disclosed, and "0" otherwise.
DEFRPT	Indicator variable coded "1" for companies whose auditors received a GAAP-deficient PCAOB inspection report upon the public dissemination of the inspection report on the PCAOB website and "0" for companies whose auditors received a clean PCAOB inspection report.
INOWN	Cumulative percentage of voting stock shares held by managers and directors (from proxy statements).
LEVERAGE	The ratio of long-term debt to total assets (from 10-KSB or Compustat).
ASSETS	Total assets (from 10-KSB, 10-K, or Compustat).
ACE	Audit committee effectiveness variable coded "1" for an audit committee composed entirely of outside directors and having at least one financial expert as designated by SOX, and "0" otherwise (from proxy statements).
BLOCK	Cumulative ownership percentage of voting stock shares held by blockholders that are unaffiliated with management and hold at least five percent of the outstanding common shares (from proxy statements).
FINANCE	Total cash received from equity or debt issuances for the two years after receipt of the PCAOB inspection report, scaled by total assets. Both years in the measurement period must be full calendar years and measurement of this variable commences during the first full calendar year after the receipt of the PCAOB inspection report (from 10-KSB, 10-K, or Compustat).
GOINGCON	Indicator variable coded "1" in instances where firm has received a going-concern audit report modification, and "0" otherwise (from 10-KSB, 10-K, or Compustat).
FEECUT	Indicator variable coded "1" for client firm receiving a fee reduction in the year following its auditor receiving an unfavorable PCAOB inspection report, and "0" otherwise (from proxy statement).
FEWCLIENT	Indicator variable coded "1" in instances where incumbent auditor audits fewer than five publicly held companies, and "0" otherwise (from PCAOB inspection report).
RESTATE	Indicator variable coded "1" in instances where a firm has experienced at least one restatement of annual financial statements in the two-year period prior to the inspection report date, and "0" otherwise (from 10-KSB, 10-K, or 8-K).

inter-sample differences. We document that there are only two statistically significant differences between the two samples. The dismissal rate is lower for the clean sample, 17.9 percent versus 44.3 percent for the GAAP-deficient sample (p-value < 0.05). Clients of clean auditors are also more likely to be audited by an auditor with fewer than five publicly held clients. In addition, we find no statistically significant differences in industry membership across the two samples. Overall, it appears the two samples are very similar in terms of client-specific variables and industry membership.

Univariate Results

Panel A of Table 4 provides univariate results when the GAAP-deficient sample ($n = 379$) is partitioned into two groups. The partition is based on whether the client firm dismissed its GAAP-

TABLE 3

Descriptive Data

Panel A: Descriptive Statistics for 379 Clients of GAAP-Deficient Inspection Report Auditors

Variable	Mean	Median	25th percentile	75th percentile	Std. Dev.
DISMISS	0.443	0.000	0.000	1.000	0.497
INOWN (%)	40.087	36.000	17.525	59.824	29.033
LEVERAGE	0.201	0.000	0.000	0.141	0.492
ASSETS	$10,278,341	$2,250,000	$1,250,000	$4,500,078	$3,079,626
ACE	0.340	0.000	0.000	1.000	0.474
BLOCK (%)	15.079	0.000	0.000	38.500	23.333
FINANCE	0.691	0.633	0.064	1.715	0.815
GOINGCON	0. 541	1.000	0.000	1.000	0.498
FEECUT	0.103	0.000	0.000	0.000	0.303
FEWCLIENT	0.145	0.000	0.000	0.000	0.352
RESTATE	0.050	0.000	0.000	0.000	0.218

Panel B: Descriptive Statistics for 470 Clients of Clean Inspection Report Auditors

Variable	Mean	Median	25th Percentile	75th Percentile	Std. Dev.
DISMISS	0.179	0.000	0.000	0.000	0.383
INOWN (%)	38.998	37.025	16.500	60.000	27.227
LEVERAGE	0.228	0.000	0.000	0.144	0.444
ASSETS	$12,552,739	$3,750,000	$907,000	$18,750,000	$5,040,884
ACE	0.343	0.000	0.000	1.000	0.475
BLOCK (%)	15.231	0.000	0.000	40.000	24.075
FINANCE	0.679	0.672	0.080	1.866	0.945
GOINGCON	0.459	0.000	0.000	1.000	0.498
FEECUT	0.138	0.000	0.000	0.000	0.345
FEWCLIENT	0.379	0.000	0.000	1.000	0.485
RESTATE	0.017	0.000	0.000	0.000	0.129

All variables are defined in Table 2.

deficient auditor (n = 168) or retained its GAAP-deficient auditor (n = 211). Tests of differences are reported in the last column of Table 4, Panel A. With respect to the agency costs prediction of H2, insider ownership (*INOWN*) is significantly different in firms that dismissed an auditor (28.80 percent) than those that retained an incumbent auditor (49.07 percent) after the auditor received a GAAP-deficient PCAOB inspection report. In terms of leverage (*LEVERAGE*), we do not find univariate differences between the two subsamples. This may be a result of the small number of firms that have debt on their balance sheets. In particular, less than 35 percent of all sample firms had any leverage, a likely result of relying upon equity financing for survival purposes. Finally, we document significant univariate differences in total assets (*ASSETS*), with firms that dismissed auditors ($14,075,882) being larger than those that retained their GAAP-deficient, triennially inspected auditors ($7,254,774). Panel A of Table 4 generally provides univariate support for an agency-based demand for audit quality signals when the signal takes the form of a GAAP-deficient PCAOB inspection report for a triennially inspected auditor.

TABLE 4

Univariate Analysis

Panel A: Univariate Results for 379 Clients of GAAP-Deficient Auditors

Variable	Mean for Firms where *DISMISS* = 1	Mean for Firms where *DISMISS* = 0	F-statistic
INOWN (%)	28.802	49.071	12.412***
LEVERAGE	0.189	0.211	0.793
ASSETS	$14,075,882	$7,254,774	7.559**
ACE	0.571	0.156	39.094***
BLOCK (%)	24.804	8.611	21.422***
FINANCE	0.823	0.584	7.454**
GOINGCON	0.506	0.569	0.756
FEECUT	0.095	0.109	1.104
FEWCLIENT	0.178	0.118	6.728**
RESTATE	0.053	0.047	0.443
No. of obs.	168	211	

Panel B: Univariate Results for 470 Clients of Clean Inspection Report Auditors

Variable	Mean for Firms where *DISMISS* = 1	Mean for Firms where *DISMISS* = 0	F-statistic
INOWN (%)	39.432	37.554	0.388
LEVERAGE	0.238	0.222	0.656
ASSETS	$14,375,022	$12,156,180	0.777
ACE	0.321	0.347	0.437
BLOCK (%)	15.833	15.099	0.792
FINANCE	0.668	0.695	0.424
GOINGCON	0.488	0.453	0.111
FEECUT	0.214	0.054	13.766***
FEWCLIENT	0.357	0.384	0.894
RESTATE	0.024	0.016	0.982
No. of obs.	84	386	

*, **, *** Significant at p-levels of less than 0.10, 0.05 and 0.01, respectively.
All variables are defined in Table 2.

Consistent with H3 and H4, we find firms with effective audit committees (*ACE*) and blockholders are significantly more likely to dismiss auditors rather than to retain an auditor that has received a GAAP-deficient PCAOB inspection report. For the subsample of firms that dismiss their auditors, 57.1 percent have audit committees that are compliant with SOX (i.e., comprised entirely of independent directors and containing at least one financial expert) and mean *BLOCK* is 24.8 percent. In contrast, for the subsample of firms that retain their auditors, mean *ACE* is 15.6 percent and mean *BLOCK* is 8.6 percent. These differences are significant at a p-value of less than one percent. Our results are consistent with stakeholders (audit committee, blockholders) reacting to a GAAP-deficient, triennially inspected PCAOB inspection report. In terms of raising financing (*FINANCE*), firms that dismissed their GAAP-deficient auditors are significantly more active in the securities market.

Of the control variables, firms that retain their auditors receive more going-concern modifications (56.9 percent) than those that switch auditors (50.6 percent); however, the difference is not significant. We find no univariate difference between our *FEECUT* or *RESTATE* variables within the two subsamples. Finally, for the *FEWCLIENT* variable, we find that firms that dismiss their GAAP-deficient auditor are more likely to have auditors with fewer than five clients.

Panel B of Table 4 provides univariate results when the clean sample (n = 470) is partitioned based on whether the client firm dismissed its clean auditor (n = 84) or retained its clean inspection report auditor (n = 386). Tests of differences are reported in the last column of Table 4, Panel B. With respect to the agency cost prediction of the second hypothesis, *INOWN*, *LEVERAGE*, and *ASSETS* are not statistically different across the two subsamples. With regard to the other test variables, neither blockholder presence (*BLOCK*) nor effective audit committee presence (*ACE*), appears to explain the auditor dismiss/retain decision for the clean sample. We also fail to document significant differences across the two subsamples for securities issues (*FINANCE*), the receipt of a going-concern audit report (*GOINGCON*), and whether the auditor has fewer than five clients (*FEWCLIENT*). The only statistically significant difference in test variables across the two clean subsamples is for our *FEECUT* variable. In particular, client firms that dismissed their clean inspection report auditors are far more likely to receive a subsequent-year fee cut from their new auditor (0.214) than those client firms that retained their clean inspection report auditors (0.054). In sum, the results from Panel B of Table 4 generally do not provide support for stakeholders' reaction to, or an agency-based demand for, audit quality signals when the signal takes the form of a clean PCAOB inspection report.

Multiple Regression Results

Our regression model is given in Equation (1) and our results are summarized in Table 5. As our dependent variable is dichotomous and many of our independent variables are interactive in nature, we utilize a logistic regression approach and calculate Z-statistics following Ai and Norton (2003). With respect to H1, we find a significantly positive relation between *DEFRPT* and *DISMISS* (p-value < 0.01). This finding suggests that auditors receiving a GAAP-deficient PCAOB inspection report are more likely to be dismissed than auditors that receive a clean report and provides multivariate support for H1.

The coefficients on the three interaction terms (β_3, β_5, and β_7) test H2. We find a significantly negative relation between the interaction of inside ownership with the GAAP-deficient report variable (*INOWN* $*$ *DEFRPT*). This suggests that lower values of inside ownership (i.e., high agency conflict) magnify the positive relation between receiving a GAAP-deficient PCAOB inspection report and the likelihood of dismissing an auditor. We do not find any relation between *LEVERAGE* $*$ *DEFRPT* and the likelihood of dismissal. We document a statistically significant positive relation between the interaction of client *SIZE* and *DEFRPT* and the likelihood of dismissing an auditor. This suggests that larger client size magnifies the positive relation between a deficient report and the likelihood of dismissal. While client size might be associated with greater switching costs due to an auditor's learning curve regarding the client, our typical firm is extremely small. Accordingly, we posit that switching costs are likely to be very small and that the dominant effect is one of agency costs compelling registrants of relatively larger sample firms to dismiss an auditor that receives a GAAP-deficient report.

With respect to the audit committee (H3), our interaction variable *ACE* $*$ *DEFRPT* is strongly and positively related to the likelihood of dismissal. This result suggests that the

TABLE 5

Pooled Logistic Regression Results for GAAP-Deficient and Clean Inspection Report Auditors

$$DISMISS = \beta_0 + \beta_1 DEFRPT + \beta_2 INOWN + \beta_3 DEFRPT{*}INOWN + \beta_4 LEVERAGE + \beta_5 DEFRPT{*}LEVERAGE + \beta_6 SIZE + \beta_7 DEFRPT{*}SIZE + \beta_8 ACE + \beta_9 DEFRPT{*}ACE + \beta_{10} BLOCK + \beta_{11} DEFRPT{*}BLOCK + \beta_{12} FINANCE + \beta_{13} DEFRPT{*}FINANCE + \beta_{14} GOINGCON + \beta_{15} DEFRPT{*}GOINGCON + \beta_{16} FEECUT + \beta_{17} DEFRPT{*}FEECUT + \beta_{18} FEWCLIENT + \beta_{19} DEFRPT{*}FEWCLIENT + \beta_{20} RESTATE + \beta_{21} DEFRPT{*}RESTATE + \varepsilon$$

Variable	Predicted Sign	Parameter Estimate	Z-statistic
Intercept		0.4807	1.0882
DEFRPT	+	2.6606	3.9804***
INOWN	?	−0.0053	−0.9922
*DEFRPT * INOWN*	−	−1.9727	−3.0003***
LEVERAGE	?	−1.0440	−0.1022
*DEFRPT * LEVERAGE*	−	−0.3655	−0.8944
SIZE	?	1.0008	0.4747
*DEFRPT * SIZE*	+	2.3201	3.7584***
ACE	?	0.8003	0.7777
*DEFRPT * ACE*	+	1.7999	5.0444***
BLOCK	?	3.6622	0.7009
*DEFRPT * BLOCK*	+	0.4717	2.4455**
FINANCE	?	0.5995	1.0072
*DEFRPT * FINANCE*	+	1.0330	4.4965***
GOINGCON	?	−0.8988	−0.1534
*DEFRPT * GOINGCON*	?	0.0309	0.3777
FEECUT	?	1.7309	2.0656**
*DEFRPT * FEECUT*	?	−0.3015	−0.4933
FEWCLIENT	?	0.0726	0.8871
*DEFRPT * FEWCLIENT*	+	0.8082	3.3501***
RESTATE	+	0.9055	0.8664
*DEFRPT * RESTATE*	+	−1.2292	−0.3351
Obs.		849	
Pseudo R^2		0.3452	

*, **, *** Significant at p-levels of less than 0.10, 0.05 and 0.01, respectively. The Z-statistics are calculated following Ai and Norton (2003).
Variables are defined Table 2, with the exception of *SIZE*, which is the natural log of total assets.

presence of an effective audit committee magnifies the positive relation between receiving a GAAP-deficient PCAOB inspection report and the likelihood of dismissal. This result suggests that a SOX-compliant audit committee, which is designed to be one of the more important auditor selection stakeholders in the post-SOX environment, reacts unfavorably to a GAAP-

deficient PCAOB inspection report.[15] Also, *BLOCK* ∗ *DEFRPT* exhibits a significantly positive association with the likelihood of dismissal. This suggests that firms subject to a high level of external monitoring magnify the positive relation between receiving a GAAP-deficient PCAOB inspection report and the likelihood of dismissal providing support for H4. In terms of securities issuances (H5), we also document a statistically significant and positive relation between *DEFRPT* ∗ *FINANCE* and the likelihood of dismissal. This provides multivariate support for H5.

Confirming our univariate results, we find no relation between the receipt of a going-concern opinion or the interaction variable, *GOINGCON* ∗ *DEFRPT*, and the likelihood of dismissal. This result does not support the opinion-shopping argument, and prior research has shown only mixed support for this theory. We find a positive and significant relation between subsequent-year audit fee reductions and *DISMIS*S, which suggests fee shopping. However, coefficient estimates for our interaction variables, *FEECUT* ∗ *DEFRPT* and *RESTATE* ∗ *DEFRPT*, are not significant. *FEWCLIENT* ∗ *DEFRPT* exhibits a significantly positive association with the likelihood of dismissal. This suggests that the likelihood of dismissal is higher for GAAP-deficient auditors that audit fewer than five clients, possibly because the identity of the client may be more apparent since the auditor has only a few clients. One of the primary criticisms of the PCAOB inspection report is the failure to disclose the number of engagement reviews, and this finding suggests that stakeholders could find this information useful if disclosed.

In sum, our regression results provide support for the hypothesis that clients react to GAAP-deficient PCAOB inspection reports by dismissing the auditor at a significantly higher rate. It appears that clients of triennially inspected auditors are using a GAAP-deficient inspection report as a signal of audit quality. In addition, effective audit committees, blockholders, and greater agency conflicts magnify the positive relation between receiving a GAAP-deficient report and the likelihood of dismissal.

Results for the GAAS-Deficient Sample

In this section, we examine stakeholder reaction among clients of GAAS-deficient, triennially inspected auditors. We conduct this additional analysis for several reasons. First, extant empirical research is inconclusive as to whether GAAP-deficient reports are more severe than GAAS-deficient reports (Gunny and Zhang 2012; Gramling et al. 2011; Lennox and Pittman 2010). Second, examining stakeholder reaction to GAAS-deficient inspection reports enables us to address the PCAOB's recently expressed concerns pertaining to auditors' minimization attempts surrounding the disclosure of GAAS deficiencies (PCAOB 2012, 2011a).

In addition to the lack of extant empirical research addressing perceived differences in inspection report severity, there are three other institutional reasons why GAAS- and GAAP-deficient reports may have similar effects on perceived audit quality. First, the PCAOB notes that "PCAOB staff have found no direct statistical relationship between the size of an abnormal accrual and the probability that inspections staff would detect an audit failure" (PCAOB 2012). Second, the PCAOB states that all deficiencies revealed in the inspection reports are serious enough to warrant public disclosure in the reports themselves. For example, many market participants may consider collecting insufficient audit evidence on which to base the opinion (i.e., a GAAS-deficiency) to be a

[15] We also collect data on whether the audit committee has a financial expert. *FINEXP* is coded "1" in cases where the audit committee included a director with financial expertise, and "0" otherwise. Overall, it appears that if there is an audit committee with a financial expert, it is overwhelmingly an audit committee that is already fully independent and meeting at least four times annually. Thus, the inclusion of this variable basically reinforced our results since very few of the non-independent audit committees included a financial expert.

serious indictment of audit quality. Finally, one can argue that GAAS deficiencies could be more serious because they might reflect firm-wide quality issues whereas *ex post* disclosure of an allowed GAAP departure can occur even if the auditor performs a GAAS-compliant audit.[16]

We note that of the 521 triennially inspected PCAOB inspection reports (filed from January 21, 2005 to December 31, 2007), 204 (39.2 percent) received a GAAS-deficient report. Since the number of PCAOB inspection reports that indicate a GAAS-deficiency far exceed the number that received a GAAP-deficiency, we construct a matched sample of GAAS-deficient auditors. In choosing our sample of matched GAAS-deficient auditors, we match on the total number of publicly held clients per the PCAOB inspection reports. We did so in an effort to control for auditor size (which is likely to be a function of the number of publicly held clients) and to generate a similar sample size. Our GAAS-deficient sample consists of 58 auditors. We then utilize a 10-K/10-KSB word search for each applicable GAAS-deficient auditor in a manner consistent with the technique described in the "Sample Selection" section to create a roster of clients for these 58 auditors. The resulting GAAS-deficient sample is comprised of 380 clients.

Table 6 provides descriptive statistics for the 380 clients of GAAS-deficient auditors. We note that, in contrast to the GAAP-deficient sample, there is a significantly lower client dismissal rate of 20.5 percent for firms being audited by a GAAS-deficient auditor. The rate at which clients of GAAS-deficient auditors dismissed their incumbent auditor was very similar (and not significantly different) to that of clients of clean inspection auditors (17.9 percent). We also find that characteristics of clients audited by GAAS-deficient auditors are similar to clients of GAAP-deficient and clean auditors. That is, the sample of clients audited by GAAS-deficient auditors were also very small, risky, and with low visibility.

Our regression model using the GAAS-deficient sample as the control group is reported in Table 7. The only difference with Table 5 is that the variable *DEFRPT* is coded "1" in instances of a GAAP-deficient report and "0" in cases of a GAAS-deficient report. The results resemble those reported in Table 5. The consistency in results suggests that our evidence is driven exclusively by client reaction to GAAP-deficient reports. This indicates that the severity of the deficiencies was a key determinant in the auditor dismissal decision and that registrants differentiated between the levels of PCAOB inspection report findings—but only with respect to a GAAP-deficient inspection report. Next, we pool the GAAS-deficient and clean auditor samples. The only difference is that our *DEFRPT* is coded "1" in instances of a GAAS-deficient report and "0" in cases of a clean inspection report. The results of this logistic regression are documented in Table 8 and reveal that clients are not more likely to dismiss a GAAS-deficient relative to a clean report auditor.

The evidence of Tables 6–8 is consistent with Lennox and Pittman (2010) who find market share changes are insensitive to the issuance of a GAAS-deficient report. In addition to the de-emphasis of PCAOB inspection report findings by auditors as previously described, there are other reasons why a GAAS-deficient inspection report may not elicit the same degree of stakeholder reaction as a GAAP-deficient inspection report. For example, every GAAS-deficient report contains the following statement: "the Firm did not obtain sufficient competent evidential matter to support its opinion on the issuer's financial statements." It may be that the auditor obtained enough evidence, but *failed to properly document* the evidence or procedures used to obtain such evidence. In this case, the auditor used the correct judgment in terms of the outcome (i.e., the audited financial statements were ultimately free of material error), but failed to provide the inspection team with the requisite amount of documentation.

Several additional factors may assist in explaining the muted response to GAAS-deficient inspection reports. Most notably, there have been several criticisms about the PCAOB inspection

[16] We thank an anonymous reviewer for providing these insights.

TABLE 6

Descriptive Data and Univariate Analysis for GAAS-Deficient Inspection Report Auditors

Panel A: Descriptive Statistics for 380 Clients of GAAS-Deficient Auditors

Variable	Mean	Median	25th Percentile	75th Percentile	Std. Dev.
DISMISS	0.205	0.000	0.000	0.000	0.404
INOWN (%)	38.424	33.400	16.250	57.275	24.733
LEVERAGE	0.225	0.000	0.000	0.156	0.499
ASSETS	$8,108,776	$1,900,000	$1,200,000	$4,579,000	$3,113,852
ACE	0.318	0.000	0.000	1.000	0.466
BLOCK (%)	15.833	0.000	0.000	37.500	25.884
FINANCE	0.702	0.645	0.080	1.750	0.833
GOINGCON	0.634	1.000	0.000	1.000	0.482
FEECUT	0.155	0.000	0.000	0.000	0.362
FEWCLIENT	0.205	0.000	0.000	0.000	0.404
RESTATE	0.016	0.000	0.000	0.000	0.125

Panel B: Univariate Results for 380 Clients of GAAS-Deficient Auditors

Variable	Mean for Firms where *DISMISS* = 1	Mean for Firms where *DISMISS* = 0	F-statistic
INOWN (%)	0.417	0.376	1.102
LEVERAGE	0.241	0.221	0.223
ASSETS	$9,337,411	$7,791,446	0.794
ACE	0.295	0.324	0.179
BLOCK (%)	16.012	15.787	0.255
FINANCE	0.677	0.708	0.435
GOINGCON	0.666	0.626	0.451
FEECUT	0.218	0.139	7.899***
FEWCLIENT	0.231	0.199	0.337
RESTATE	0.026	0.013	1.016
No. of obs.	78	302	

All variables are defined in Table 2.

report process that include the failure to disclose quality control deviations (Lennox and Pittman 2010), the focus on "form versus substance" (Daugherty and Tervo 2010), as well as boilerplate verbiage concerning GAAS-deficiencies (Roybark 2006). Finally, there may be differences in auditor judgment between the PCAOB and the auditor concerning conformance with GAAS.[17] In

[17] To illustrate, we cite one of Ernst & Young's GAAS deficiencies. Private conversations with two Ernst & Young partners indicated that Ernst & Young opted to not send accounts receivable confirmations for a Cable TV operator. Ernst & Young used an audit approach consisting of (1) a testing of and relying upon controls over the recurring monthly invoicing/cash receipts processes, (2) utilizing alternative procedures, most notably in the form of subsequent cash receipts, as over 98 percent of the December 31 accounts receivable balance was paid in cash within the two months following the balance sheet date, and (3) utilizing analytical review procedures at the account level (the partners cited extremely high monthly serial correlation between sales and subsequent cash receipts, with little seasonality). Nonetheless, the PCAOB cited a lack of confirmatory evidence with regard to year-end accounts receivable/revenue recognition.

TABLE 7

Pooled Logistic Regression Results for GAAP-Deficient and GAAS-Deficient Samples

$$DISMISS = \beta_0 + \beta_1 DEFRPT + \beta_2 INOWN + \beta_3 DEFRPT{*}INOWN + \beta_4 LEVERAGE + \beta_5 DEFRPT{*}LEVERAGE + \beta_6 SIZE + \beta_7 DEFRPT{*}SIZE + \beta_8 ACE + \beta_9 DEFRPT{*}ACE + \beta_{10} BLOCK + \beta_{11} DEFRPT{*}BLOCK + \beta_{12} FINANCE + \beta_{13} DEFRPT{*}FINANCE + \beta_{14} GOINGCON + \beta_{15} DEFRPT{*}GOINGCON + \beta_{16} FEECUT + \beta_{17} DEFRPT{*}FEECUT + \beta_{18} FEWCLIENT + \beta_{19} DEFRPT{*}FEWCLIENT + \beta_{20} RESTATE + \beta_{21} DEFRPT{*}RESTATE + \varepsilon$$

Variable	Predicted Sign	Parameter Estimate	Z-statistic
Intercept		−1.5835	−0.6941
DEFRPT	+	3.3025	3.9999***
INOWN	?	−0.7333	−1.2229
*DEFRPT * INOWN*	−	−2.3333	−3.1729***
LEVERAGE	?	−1.2825	−0.3745
*DEFRPT * LEVERAGE*	−	0.9009	0.9329
SIZE	?	0.5315	0.8880
*DEFRPT * SIZE*	+	1.1654	4.0004***
ACE	?	0.0023	0.1291
*DEFRPT * ACE*	+	2.5382	5.4171***
BLOCK	?	2.9008	0.3715
*DEFRPT * BLOCK*	+	0.5884	4.2999***
FINANCE	?	0.4604	0.9333
*DEFRPT * FINANCE*	+	1.5501	4.0344***
GOINGCON	?	1.2488	1.3300
*DEFRPT * GOINGCON*	?	−0.7777	−0.5177
FEECUT	?	1.7511	2.4056**
*DEFRPT * FEECUT*	?	0.0094	0.1156
FEWCLIENT	?	1.9343	1.1002
*DEFRPT * FEWCLIENT*	+	0.4766	2.8222***
RESTATE	+	−1.0775	−0.3202
*DEFRPT * RESTATE*	+	0.0399	0.0575
Obs.		759	
Pseudo R^2		0.3112	

*, **, *** Significant at p-levels of less than 0.10, 0.05 and 0.01, respectively. The Z-statistics are calculated following Ai and Norton (2003).

All variables per Table 2 except *DEFRPT*, which is an indicator variable coded "1" for companies whose auditors received a GAAP-deficient PCAOB inspection report upon the public dissemination of the inspection report on the PCAOB website, and "0" for companies whose auditors received a GAAS-deficient PCAOB inspection report.

relation to this difference in opinion regarding GAAS compliance, the PCAOB has expressed concerns pertaining to auditors' minimization attempts surrounding the disclosure of GAAS deficiencies—especially to corporate audit committees (PCAOB 2011a). We posit that such minimization tactics by audit firms are less likely to be effective when attempting to de-emphasize a GAAP-deficient inspection report *vis-à-vis* a GAAS-deficient inspection report.

TABLE 8

Pooled Logistic Regression Results for GAAS-Deficient and Clean Samples

$$DISMISS = \beta_0 + \beta_1 DEFRPT + \beta_2 INOWN + \beta_3 DEFRPT{*}INOWN + \beta_4 LEVERAGE + \beta_5 DEFRPT{*}LEVERAGE + \beta_6 SIZE + \beta_7 DEFRPT{*}SIZE + \beta_8 ACE + \beta_9 DEFRPT{*}ACE + \beta_{10} BLOCK + \beta_{11} DEFRPT{*}BLOCK + \beta_{12} FINANCE + \beta_{13} DEFRPT{*}FINANCE + \beta_{14} GOINGCON + \beta_{15} DEFRPT{*}GOINGCON + \beta_{16} FEECUT + \beta_{17} DEFRPT{*}FEECUT + \beta_{18} FEWCLIENT + \beta_{19} DEFRPT{*}FEWCLIENT + \beta_{20} RESTATE + \beta_{21} DEFRPT{*}RESTATE + \varepsilon$$

Variable	Predicted Sign	Parameter Estimate	Z-statistic
Intercept		−1.7755	−1.3234
DEFRPT	+	0.9334	0.5850
INOWN	?	−1.2822	−0.7105
*DEFRPT * INOWN*	−	−0.4545	−0.3671
LEVERAGE	?	1.6501	0.8374
*DEFRPT * LEVERAGE*	−	−0.3333	−0.6104
SIZE	?	−2.7666	−1.0017
*DEFRPT * SIZE*	+	2.0111	1.0008
ACE	?	1.3899	0.8042
*DEFRPT * ACE*	+	0.6992	0.0048
BLOCK	?	2.3545	0.4999
*DEFRPT * BLOCK*	+	−0.2393	−0.7979
FINANCE	?	4.1115	1.0012
*DEFRPT * FINANCE*	+	−0.3965	−0.7177
GOINGCON	?	0.6000	0.6063
*DEFRPT * GOINGCON*	?	1.1310	0.5123
FEECUT	?	2.0301	4.6038***
*DEFRPT * FEECUT*	?	1.7888	1.2226
FEWCLIENT	?	−1.0019	−1.1880
*DEFRPT * FEWCLIENT*	+	0.4373	0.8022
RESTATE	+	0.0655	0.2330
*DEFRPT * RESTATE*	+	0.0424	0.3303
Obs.		850	
Pseudo R^2		0.056	

*, **, *** Significant at p-levels of less than 0.10, 0.05 and 0.01, respectively. The Z-statistics are calculated following Ai and Norton (2003).

All variables per Table 2 except *DEFRPT*, which is an indicator variable coded "1" for companies whose auditors received a GAAS-deficient PCAOB inspection report upon the public dissemination of the inspection report on the PCAOB website, and "0" for companies whose auditors received a clean PCAOB inspection report.

Additional Descriptive Information on Successor Auditors

In this section, we examine the characteristics of successor auditors in more detail. First, we examine the presence of restatements in the two-year period after the issuance of the PCAOB inspection report. Although restatements are rare, we find that within the GAAP-deficient sample, the rate of restatement is higher relative to the clean and GAAS-deficient sample. Also, the rate is

not statistically different between clients of clean and GAAS-deficient auditors. Second, auditor switches, in our sample, are almost always local-to-local auditors since most are small auditors that do not have a national presence. For example, we find switches to national/Big 4 auditors are rare with only 3.6 percent, 3.6 percent, and 3.8 percent of auditor switches from clean, GAAS-deficient, or GAAP-deficient auditor to Big 4 auditors, respectively. In addition, 1.2 percent, 2.4 percent, and 5.1 percent of auditor switches were from clean, GAAS-deficient, or GAAP-deficient auditor to national auditors, respectively.

Additional Sensitivity Tests

We also performed tests to determine if there were additional inspection report disclosures that could incrementally impact stakeholder reaction to the reports. Similar to Lennox and Pittman (2010), we included dummy variables for the following circumstances that may indicate greater weakness severity: (1) *NO_TEST* if the report discloses that the audit firm failed to undertake an evaluation, (2) *INADEQUATE_TEST* if the report discloses that the audit firm's test or evaluation was inadequate, (3) *PERFORM_AND_DOCUMENT* if the report includes the phrase "failed to perform and document," and (4) *PERVASIVE* if the report identifies a "pervasive failure to plan, document and perform." We re-ran the model in Table 5 and found that the coefficient estimates on these variables were not statistically significant at conventional levels for any of our tests.

We also performed tests to determine if our results were sensitive to our definition of *DISMISS*. More specifically, for the GAAP-deficient, clean, and GAAS-deficient samples 10, 8, and 8 observations, respectively, were switches from a triennially inspected auditor to a Big 4 or national firm. In these cases, our *DISMISS* variable is coded "0." Our results are robust if we delete observations where the successor auditor was either a Big 4 or national auditor or if we re-classify these switches as $DISMISS = 1$.

To ensure that our results are not driven by the presence of any one auditor, we conducted our regressions by excluding observations pertaining to one auditor at a time. The omission of sample observations belonging to any particular GAAP-deficient or clean auditor did not qualitatively alter our results. When auditors with just one client receive deficient PCAOB reports, the deficiency can be attributed to the specific client with certainty. To ensure that our results are not driven by these one-client auditors, we excluded one-client auditors from the analysis and obtained similar results. To alleviate the concern that auditor dismissals are affected by the initial round of PCAOB inspections instead of variables of our interest, we analyzed separately for PCAOB inspections in year 2005, 2006, and 2007 for all three samples. We obtained results qualitatively similar to those in Tables 5, 7, and 8 across all three years.

In terms of client characteristics, we also tested for the possibility that Section 404 requirements may have created large switching costs that, in turn, may have discouraged sample firms from dismissing their auditors. To address this, we include a dichotomous variable coded "1" for client firms that had to include reports on internal controls, "0" otherwise. Moreover, we included a dichotomous variable coded "1" in instances where the client firm disclosed a material weakness and "0" otherwise.[18] Inclusion of these variables did not substantively alter our results.

We measure our securities issuance variable after the issuance of a PCAOB inspection report. Endogeneity therefore may be a concern since *FINANCE* may depend on the auditor dismissal decision. Therefore, we define an alternative *FINANCE* variable as the difference in free cash flow of the previous quarter and the three quarter average of capital expenditures in the year before the

[18] We performed a similar test for firms that are traded on any of the three major exchanges. The inclusion of a dichotomous variable coded "1" when a client firm is traded on any of the three major exchanges (and "0" otherwise) did not show any statistically significant relation with our dependent variable.

PCAOB inspection report date. The results in Tables 5, 7, and 8 are robust to the alternative specification of this variable. In addition, we perform a Hausman (1978) endogeneity test, and it indicates that endogeneity does not materially affect our inferences. Last, in less than 5 percent of our observations, the PCAOB report date was within 60 days of the audit report date of the client of the triennially inspected auditor.

CONCLUSION

In an effort to restore investor confidence and trust in U.S. capital markets following major accounting and auditing scandals, Congress enacted the Sarbanes-Oxley Act (SOX) in 2002. We examine the potential use of PCAOB inspection reports of triennially inspected auditors as audit quality signals. Our examination is based upon the premise that PCAOB inspection reports may serve as a publicly available proxy of perceived audit quality due to the independence and experience of the PCAOB inspectors and the specificity, variation and accessibility of their reports. We sort the inspection reports into three levels of increasing severity: clean, GAAS-deficient, and GAAP-deficient.

We find that clients of triennially inspected auditors react differentially to the PCAOB inspection reports contingent upon their severity. More specifically, we find that a GAAP-deficient inspection report is more likely to trigger an auditor dismissal relative to a clean report or a GAAS-deficient report. In addition, the subsequent auditor is virtually always a triennially inspected auditor that is not GAAP-deficient. GAAP-deficient, triennially inspected auditors are dismissed at over twice the rate of either clean or GAAS-deficient auditors. Moreover, our measures of agency conflict and audit committee effectiveness help predict which clients of GAAP-deficient, triennially inspected auditors are more likely to dismiss their auditor. Interestingly, we note that going-concern audit reporting and fee low-balling do not appear to be motivating dismissals of GAAP-deficient triennially inspected auditors. The evidence provided herein suggests no stakeholder reaction to GAAS-deficient reports *vis-à-vis* clean inspection reports. This indicates that a GAAS-deficient report is relatively uninformative to auditor choice stakeholders, consistent with Lennox and Pittman (2010). Our results suggest that clients are using certain PCAOB inspection reports as a publicly available signal of audit quality and not as a means of procuring more favorable auditor reporting or audit fees.

We believe our study could be of interest to researchers, regulators, and practitioners along several dimensions. First, our paper is the first to document that PCAOB inspection reports created heterogeneity in auditor brand name among a group of triennially inspected audit firms that did not previously exist. Prior research has universally treated these auditors as one homogenous group known as "other." However, we caution that this differentiation is present only for GAAP-deficient, relative to non-GAAP-deficient, triennially inspected auditors. Second, the muted stakeholder reaction to GAAS-deficient inspection reports supports concerns recently voiced by PCAOB Chairman Doty pertaining to the communication/de-emphasizing of audit deficiencies to clients and their audit committees (PCAOB 2011a). Third, our paper is the first to empirically link audit committee characteristics to PCAOB inspection report severity and auditor choice. We believe this is an increasingly relevant finding as audit committees have been granted much greater auditor dismissal/hiring authority due to SOX. Finally, we are the first to link the use of PCAOB inspection reports to an agency-based demand for audit quality by companies that have been generally ignored by prior research due to data availability and client size.

Overall, our results suggest that the PCAOB inspection process has created a publicly available means of quality differentiation among triennially inspected audit firms. We acknowledge that our population of registrants and their auditors is small relative to the overall population of publicly traded firms. However, this focus allows us to generalize our results to an important set of auditors

and registrants that the PCAOB has recently added or is endeavoring to add to their inspection program. That is, our study indicates that a PCAOB inspection report may serve as an audit quality signal for auditors of broker-dealers, who were previously exempt from the inspection process. Such a finding has current relevance given the PCAOB has recently sought to expand the inspection program to foreign auditors, such as those based in China whose clients are cross-listed on U.S. security exchanges or are listed due to a reverse merger (PCAOB 2011e, 2011a). Our investigation suggests that there is merit to the inspection process and that stakeholders can find certain types of these reports useful. Given these current developments, we encourage future empirical research on the costs, benefits, implications, and consequences of the PCAOB inspection process.

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APPENDIX A

EXAMPLES OF TIMELINE OF PCAOB INSPECTION REPORT AND SUBSEQUENT DISMISSAL

Example 1: Cordovano and Honeck's client Molecular Pharmacology

January 31, 2006: Molecular Pharmacology Files 10-KSB Audited by Cordovano and Honeck.

http://www.sec.gov/Archives/edgar/data/1191357/000122150806000006/0001221508-06-000006-index.htm

April 6, 2006: Cordovano and Honeck's GAAP-Deficient PCAOB Inspection Report Is Disclosed.

http://pcaobus.org/Inspections/Reports/Documents/2006_Cordovano_and_Honeck.pdf

June 2, 2006: Molecular Pharmacology Files 8-K Dismissing Cordovano and Honeck.

http://www.sec.gov/Archives/edgar/data/1191357/000122150806000065/form8k_06062006.htm

Example 2: Chisholm, Bierwolf & Nilson's client Green Builders Inc.

April 14, 2005: Green Builders Inc. Files 10-KSB Audited by Chisholm, Bierwolf & Nilson.

http://www.sec.gov/Archives/edgar/data/828189/000105050204000190/cole1203.txt

July 25, 2005: Chisholm, Bierwolf & Nilson's GAAP-Deficient PCAOB Inspection Report Is Disclosed.

http://pcaobus.org/Inspections/Reports/Documents/2005_Chisholm_Bierwolf.pdf

October 11, 2005: Green Builders Files 8-K Dismissing Chisholm, Bierwolf & Nilson.

http://www.sec.gov/Archives/edgar/data/828189/000121465905001502/s1014508k.htm